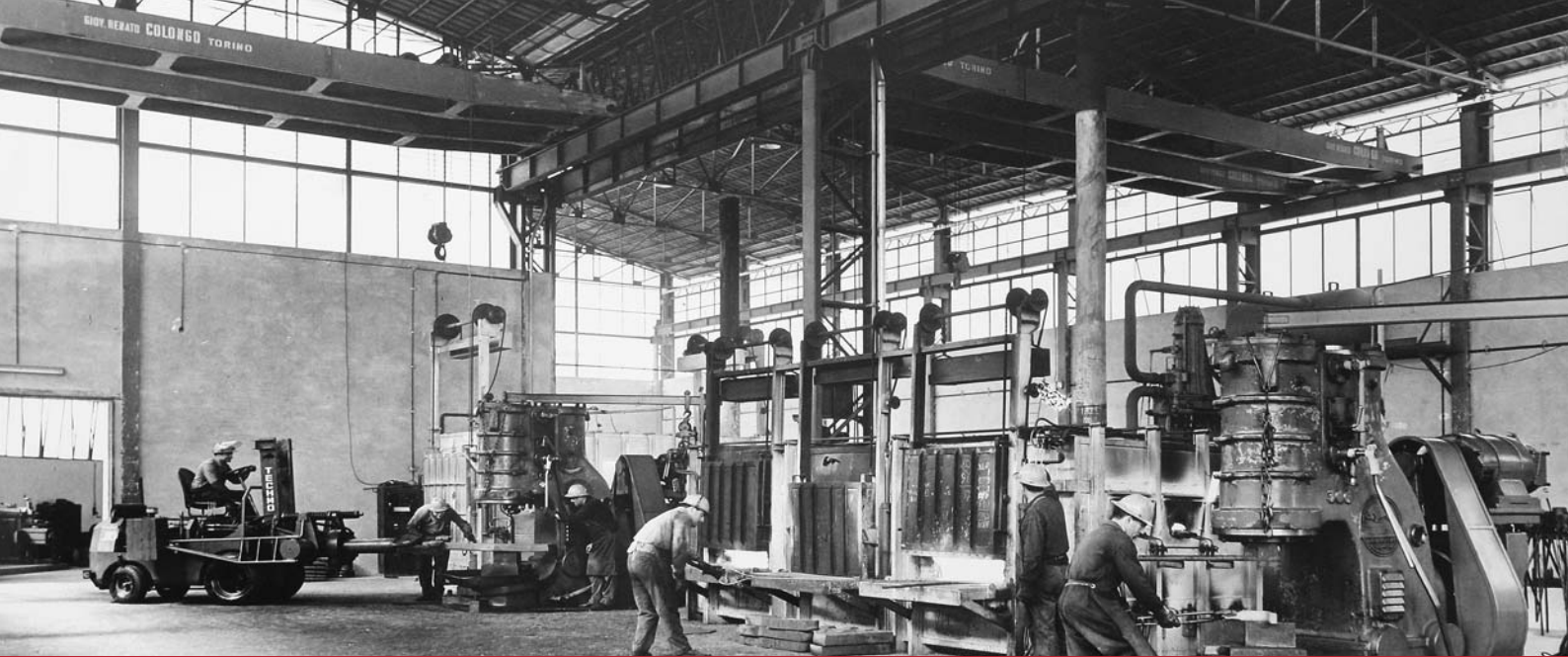




FORGIA RAPIDA



An extensive Experience, since way back in.

1961

Forgia Rapida is in business since 1961. The company boasts already 50 years of experience in small weight forgings. It is part of an industrial group together with the firm Comesa, a machine shop specialized in the manufacturing of rolls for steel industry.

Forgia Rapida employs 45 people in its 2 plants. The main plant is located in Bologna; the second one is a warehouse located in Funo (5 km far from the main plant). Together the plants cover an area of approximately 6,500 covered square meters.

The company constantly invests in developing personnel and equipment, supporting its customers in facing continuously changing needs and markets.

Great performances, both in high level of quality and excellent on time delivery record, lead Forgia Rapida to establish loyal and long term relationships with customers, thus increasing and consolidating the revenues.

Forgia Rapida can offer its expertise in supplying forgings to several markets all over the world: Europe, USA, Middle East, Far East.



Imagining the future to speed up the progress.

Excellent quality in forged products is guaranteed by high standard tools, suitable to manufacture and offer forgings compliant with all international standards and specifications.

All equipment undergo periodical inspections and maintenance, in order to avoid any break down, which could affect the lead time of production, and any discrepancy in accuracy.

Forgia Rapida constantly invests in continuous improvement of its processes and tools, aiming to offer best in class services to the market.

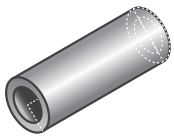
Main tools are:

- 1 Oleo-dynamic press 1500 t
- 1 Hydraulic press 1200 t
- 3 Manipulators
- 1 Furnace loader
- 4 Furnaces
- 1 Ring mill sms raw 100/80 ecompact.

Latest investments:

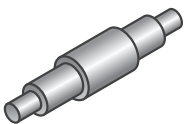
- New shipping department
- Laboratory for mechanical tests
- Heat treatment department
- Metallographic laboratory
- New warehouse for base material

Open Die Forging



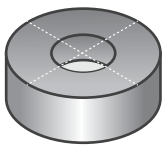
Tubes

	Ø ext	Ø int	length
Carbon Steel	(mm)	(mm)	(mm)
Alloy Steel	300	170	1.200
Stainless Steel	400	200	1.500
	600	250	2.200
	650	390	2.500
	780	430	2.000
	900	540	1.500



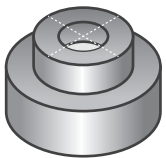
Shafts

	Ø max	max length	max weight
Carbon Steel	(mm)	(mm)	(kg)
Alloy Steel	600	4.500	5.000
Stainless Steel			
Inconel	350	4.500	1.500



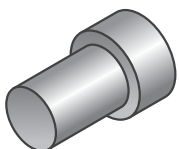
Bushes

	Ø ext	Ø int	length
Carbon Steel	(mm)	(mm)	(mm)
Alloy Steel	750	250	1.000
Stainless Steel	1.000	300	1.000
	1.000	600	1.000
	1.400	1.100	1.000



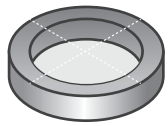
Single Hubs

	Ø flange	flange length	Ø body	body length
Carbon Steel	(mm)	(mm)	(mm)	(mm)
Alloy Steel	250 - 1.500	50 - 250	130 - 550	50 - 700
Stainless Steel				



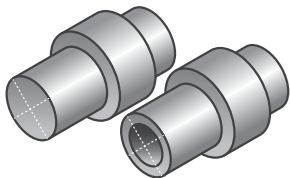
Bolts

	Ø flange	Ø body	length
AISI 4340	(mm)	(mm)	(mm)
A453 Gr 660	100 - 190	70 - 190	250 - 700
Inconel 718			



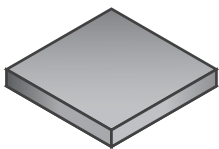
Rings

	Ø ext max	max height
Carbon Steel	(mm)	(mm)
Alloy Steel	2.700	450
Stainless Steel		
Aluminium		
Inconel	1.500	200



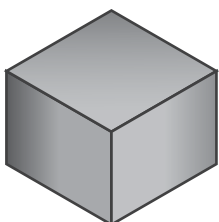
Solid/Empty Double Hubs

	Ø upper	upper length	Ø flange	flange length	Ø lower	lower length
Carbon Steel	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
Alloy Steel	150 - 530	200 - 650	300 - 750	50 - 250	150 - 530	200 - 650
Stainless Steel						



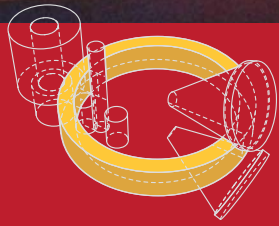
Plates

	width	height	max length
Carbon Steel	(mm)	(mm)	(mm)
Alloy Steel	250	100	3.000
Stainless Steel	400	150	3.000
	700	350	3.000
	950	300	2.500
	1.200	400	1.500



Blocks

	width	height	length
Carbon Steel	(mm)	(mm)	(mm)
Alloy Steel	350	200	700
Stainless Steel	400	300	1.000
	800	500	1.200
	1.000	550	1.000
	480	480	1.500



Ring Rolling an effective and specific process.

FORMING PROCESS FOR PRODUCTION OF SEAMLESS RINGS.

The process begins with a hollow circular perform of steel of the correct dimension in order to obtain the final ring, following there is a punching for creating the central hole. The pieces are then heat till the right temperature of deformation and transferred to the ring mill, where the pressure between the main mill roll and the mandrel allow the enlargement of the ring to the final dimension. At the same time two vertical conic rolls push on the height reducing it to the required quote. At the end of the process, we obtain seamless rings of rectangular shape with uniform mechanical properties and efficient machinability and allowance of few millimeters.

RING MILL SMS RAW 100/80 ECOMPACT@.

The machine is equipped with electro-hydraulic direct drives mounted on the roll shafts which represent an innovative drive solution for this type of application. The common central hydraulic system has been eliminated, consequently, no transfer of power is transmitted with hydraulic force. This provides real economic benefits, reduces energy consumption and eliminates risks for the environment caused by oil leakage.

PRODUCTION RANGE OF FORGIA RAPIDA.

Forgia Rapida is able to offer small and medium size rings and single pieces, forged in several steel grades and in aluminium, and we spread in a significant way the range of our rectangular shape rings from 300 to 2.700 mm in outer diameter and to 480 mm maximum in height.



HOT SHOT

Emergency Management.

There are situations in which normal development and production time of a forged piece can not be awaited for reasons which are of the

Greatest Emergency.

Breakdown, scrap replacement, sudden changes in specs or drawings. Situations like these require forgings to be delivered very quickly.

Normal quick lead time is not enough for urgent needs. Forgia Rapida knows it very well and offers its **Hot-Shot** service.

Hot-Shot is a fast track that offers customers top urgency to the job order, dedicated priority heat-treatment, express delivery.

Depending on the wide panorama of steel grades and requirements, the company is able to deliver a forged, heat treated, rough machined and tested part starting from **less than 2 weeks, delivered at customer's premises.**

Manufacturing Process

Forgia Rapida stocks a wide range of steel grades and alloys, including all common grades in Oil & Gas and Power generation business sectors, among the others.

Stock includes: Carbon steels, low alloy and high alloy steels, austenitic and martensitic stainless steels, precipitation hardening steels, nickel alloys, aluminum alloys, titanium. The warehouse is located few kilometers far from the main plant and it is used for base material stocking but also for semi-finished or finished parts the Company put in stock for customers, in order to offer very quick delivery even for complex parts.

Forgia Rapida sources mainly pre-forged bars, exclusively from qualified mills in Italy and Europe. Material incoming checks include verification of mill certificates, UT on pre-forged bars, chemical analysis and/or PMI.

7 cutting stations, equipped with semi-automatic band saws installed in the warehouse, able to cut bars and ingots from 120 mm. to 1.000 mm. in outer diameter.

70 cutting hours available every day, providing base material to the forge in 24 h from order launch.

Open die forging offers the possibility to forge a wide range of parts, according to customer requirements, big or small quantity, with outstanding results.

The base material heated in furnaces undergoes significant plastic forming (upsetting, stretching etc.) until the part reaches the desired shape and structure.

There are several advantages in choosing open die forging:

- no large series required and no costs for dies;
- high forging ratio and optimal structure orientation;
- high quality of product, verifiable with UT;
- opportunity to reach exceptional mechanical properties.

Material incoming



Cutting



Forging





Machining



Quality Testing



Forgia Rapida can count on its in-house heat treatment plant. This facility is suitable to perform all the common heat-treatment required, such as: quenching and tempering (water and polymers), normalising, annealing and solution annealing, precipitation hardening etc.. Calibration and inspections of all instruments is in compliance with international standards and specifications, such as AMS2750E, ASTM A991, API 6A and Norsok M650.

Being heat treatment a crucial part of the process, the in-house facility become very important in case of urgent requests: no matter the quantity, the plan can be rescheduled giving top priority to urgent orders, thanks to the flexibility and responsiveness of the company. As a consequence, Forgia Rapida can offer the best lead-time on the market for not standards parts and in general, for all those parts that need a dedicated forging process.

Rough machining can be executed either internally or at subcontracted to external suppliers that are periodically audited in order to maintain the standard of quality required Forgia Rapida and its clients.

All our pieces can be offered both black forged or in rough machined conditions close to the finished profile, with tolerances of +/-1 mm. Special case of finished parts will be evaluated upon request.

A complete set of tests can be performed in the internal laboratories:

Mechanical tests, including:

- Tensile test
- Charpy test at room and low temperature

Metallographic tests, such as micrographic examinations and grain size; Hardness test, both HB and HRC

- N°2 Fix Brinell durometer 3000/10
- DYNATEST Portable durometer

NDT, including:

- Ultrasonic test - UT;
 - Penetrant test - PT;
 - Magnetic particle test - MT;
 - Visual and dimensional test - VT.
- Personnel qualified second level according to SNT-TC-1A and EN 473:2008/ISO / 9712:2005 execute all non-destructive tests.



Pinion



Adaptor



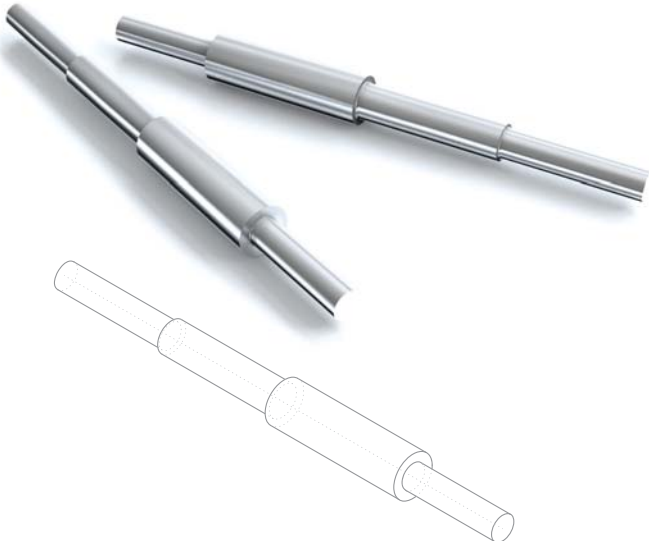
Gear



Adaptor



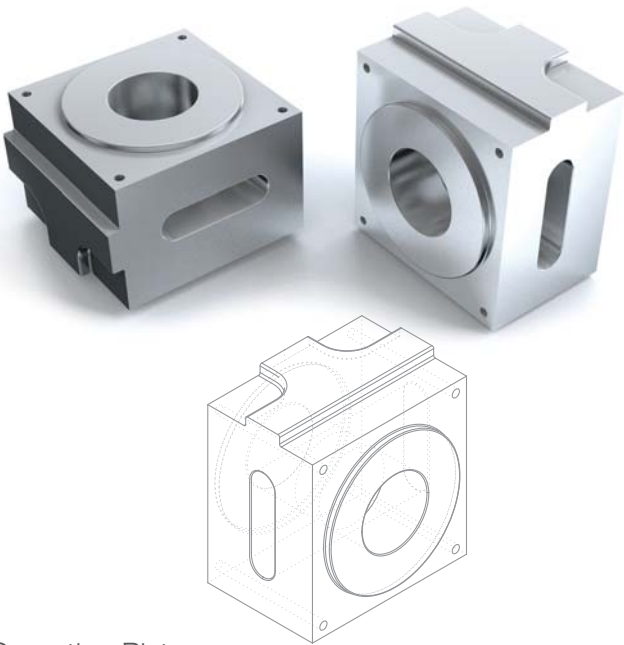
Shaft



MCS Valve



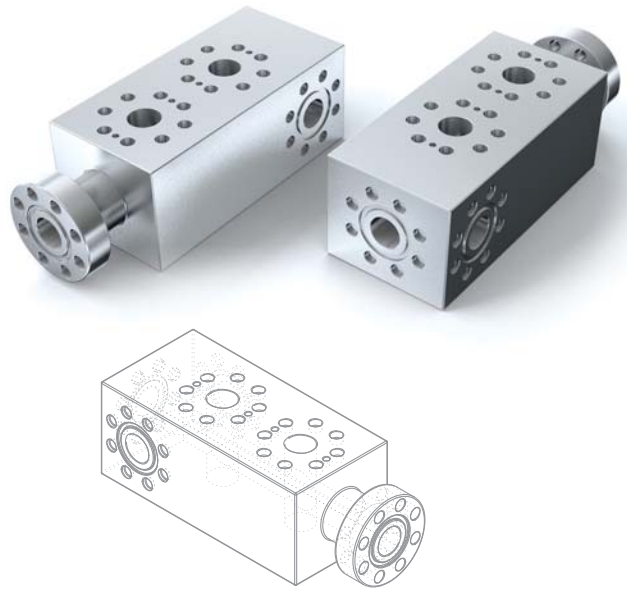
BOP Body



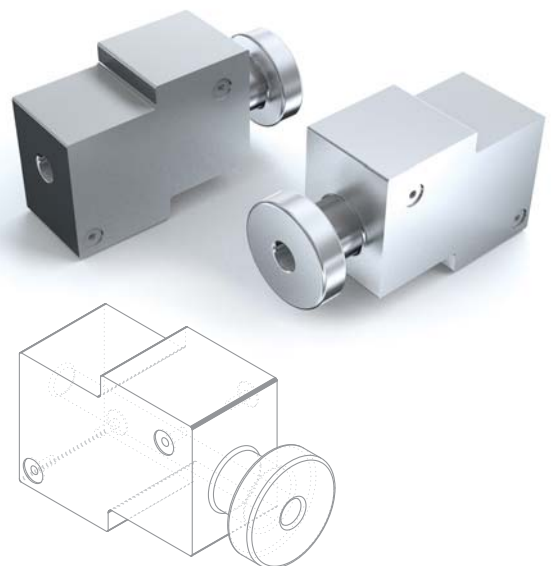
Operating Piston



Block valve



Double Master Valve





Flange



Bolt



Satellite



Pinion



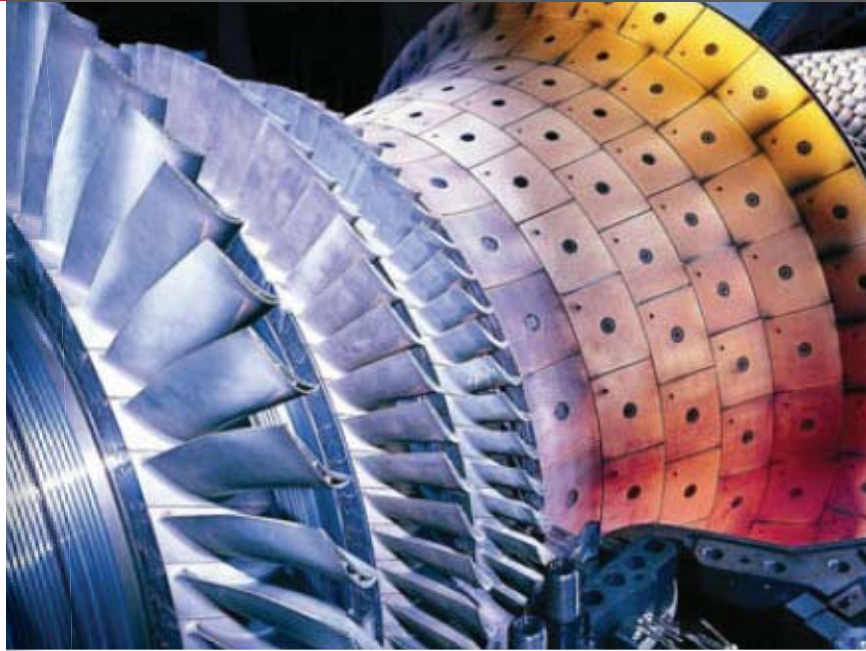
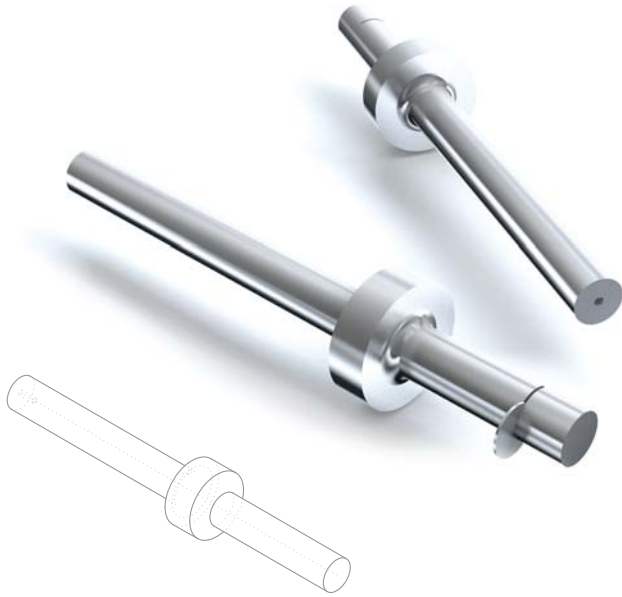
Neck Flange



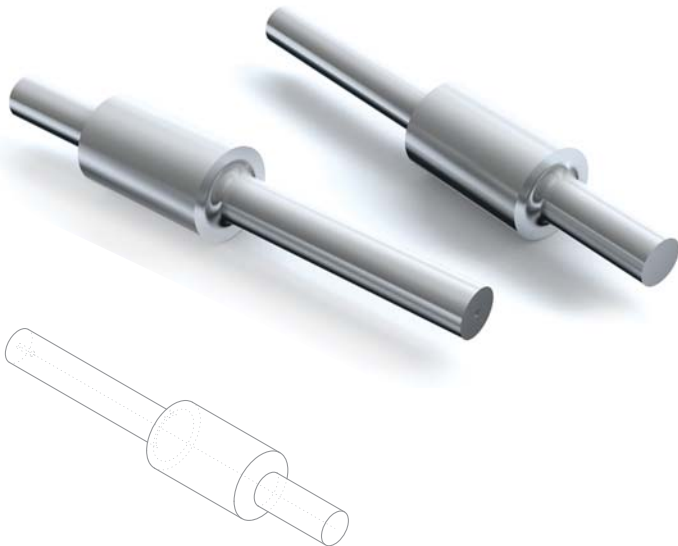
Power Generation

Products and Markets

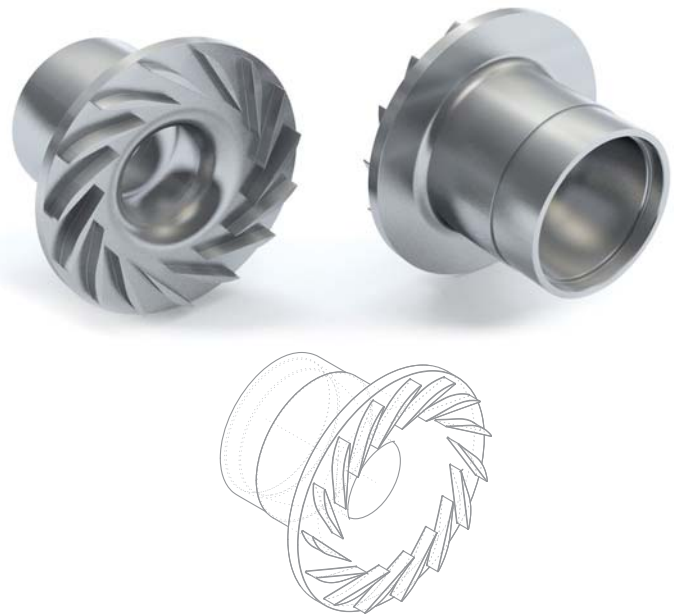
Piston Rod



Piston Rod



Diffuser



Shaft



Impeller





Materials and products test for a real Quality result.

All testing activities related to forgings supply, can be carried out in Forgia Rapida internal laboratory, such as:

- mechanical test
- hardness test
- micrografic analysis
- non destructive test

The choice of having the laboratory inhouse is very important for continuous improvement, by developing the personnel know-how, optimizing production processes and improving the level of quality.

All these aspects have positive impact on the service offered to customers, delivering products characterized by high level of quality and reliable mechanical properties.



Certified Quality System.

Forgia Rapida applies a Quality Management System compliant to ISO 9001: 2015.

The integration of internal and external certifications, monitoring all the processes, is one of the main activity carried out aiming to the optimization of resources and processes, as a part of continuous improvement. Highly qualified staff together with laboratories ensure high quality standards in all stages of production of Forgia Rapida, who cooperates with the most important of independent third-party inspection:

- ABS American Bureau of Shipping
- LR Lloyd's Register
- BV Bureau Veritas
- DNV Det Norske Veritas

Forgia Rapida is also qualified to produce Open die forging and rolled ring according to Norsok Standard M-650 Ed. 4 for Duplex F51/F60 material.

SAFETY AND ENVIRONMENTAL SYSTEM

The company is aware of its responsibility in minimizing environmental impact: for it Forgia Rapida promotes the efficient use of resources; acquires technology environmentally friendly and establishes internal controls helpful to prevent contaminations.

QUALITY, SAFETY AND ENVIRONMENTAL POLICY

Forgia Rapida is committed to provide added value to its customers by fulfilling Quality, Safety and Environmental requirements as well as all applicable legal requirements; continually improving the effectiveness of processes and promoting an efficient use of all resources in order to minimize environmental impact and prevent pollution.



FORGIA RAPIDA

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